

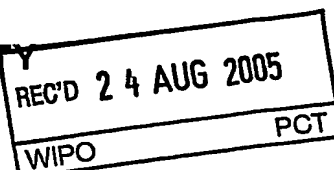
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)





Applicant's or agent's file reference PWO-S011-001	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/B2004/001887	International filing date (day/month/year) 02.06.2004	Priority date (day/month/year) 02.06.2003
International Patent Classification (IPC) or national classification and IPC A43B13/14, A43B7/22, A43B7/14, A43B17/02, A43B21/26, A43B13/18		
Applicant SPRINGBOOST S.A. ET AL.		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 11 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ sent to the applicant and to the International Bureau a total of 5 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

- This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 01.01.2005	Date of completion of this report 26.08.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Schölvinc, T.S. Telephone No. +31 70 340-3436 

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as published

Claims, Numbers

1-25 filed with telefax on 15.07.2005

Drawings, Sheets

1/14-14/14 as published

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 17-21
- because:
- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 17-21
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
 - ☒ See separate sheet for further details

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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☒ restricted the claims.
 - ☒ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-16,22-25 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16,22-25
	No: Claims	
Inventive step (IS)	Yes: Claims	1-16,22-25
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-16,22-25
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item III.

The subject matter of new independent claim 17 has not been searched and a preliminary examination can therefor not be concluded for claim 17 and its dependent claims 18-21.

The subject matter of claims 17-21 is non-unitary with respect to the other inventions cited below.

Re Item IV.

This reasoning (paragraph 1-3) is directed to the *originally published claims* 1-36.

Paragraph 4 refers to the *present set of claims* 1-25.

1. This Authority considers that there are 3 inventions covered *by the originally published claims* indicated as follows:
 - I: Claims 1-16 directed to a dorsiflexion shoe with angle α , forefoot of high density material of curved form, constraining device.
Dependent claims 4-11 are directed to a high density insert in the sole.
 - II: Claims 17-35 directed to an adaptable shoe assembly with interchangeable insole changing the angle of declination of the foot.
Dependent claims 28-35 are directed to a high density insert in the sole.
 - III: Claim 36 directed to a dorsiflexion shoe with high density insert in forefoot, heel portion made from soft material, initial angle at most 0 degrees, effect of dorsiflexion shoe
2. The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The prior art has been identified by **US-A-3 472 508 (D1)**

- 2.1 From the comparison with the prior art no technical features of independent claim 1

can be seen to make a contribution over this prior art (Special Technical Features, Rule 13(2) PCT); when comparing with the combination of claims 1 and 2:

the sole portion is a component of a shell which comprises sidewall portions.

From these STF the objective problem to be solved by the 1st invention can be seen in providing a shoe that better holds and protects the foot.

- 2.2 From the comparison of independent claim 17 (2nd invention) the following features can be seen to make a contribution over this same prior art:

an adaptable shoe assembly with interchangeable insole

From these the objective problem to be solved can be seen in providing a possibility to vary angle of declination of the foot

- 2.3 From the comparison of independent claim 36 (3rd invention) the following features can be seen to make a contribution over this same prior art:

a sole having a heel portion of soft material that deforms during exercise

From these the objective problem to be solved can be seen in providing a shoe that acts as a dorsiflexion shoe during exercise.

- 3.1 The above analysis shows that the Special Technical Features of invention 1 are not same or similar to those of invention 2 and to those of invention 3 and that the Special Technical Features of invention 2 are not same or similar to those of invention 3.

A comparison of the objective problem 1 with objective problem 2 and with objective problem 3 indicates that there is no technical correspondence between these problems nor do they show any corresponding technical effect. Hence the STF of invention 2 and of invention 3 fail to demonstrate a correspondence with the STF of invention 1, the STF of invention 2 fail to demonstrate a correspondence with the STF of invention 3; thus the requirements Rule 13.1 and 2 PCT are not fulfilled.

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- 3.2 Thus, the application does not comply with the requirements of unity of invention as set forth in Rule 13 PCT.
4. The present set of claims, annexed to this report, is restricted to inventions I and II. These inventions are now worded in current claims 1-9 (invention I) and 10-16,22-25 (invention II).

The subject matter of claims 17-21 is non-unitary with respect to the other inventions I, II, III cited above.

Re Item V.

- 1 The following documents are referred to in this communication:

D1 : US 3 472 508 A (BAKER ELIZABETH F ET AL) 14 October 1969 (1969-10-14)
D2 : US 2 518 649 A (TYDINGS KENNETH S ET AL) 15 August 1950 (1950-08-15)
D3 : WO 02/30228 A (FRYE NANCY C) 18 April 2002 (2002-04-18)
D4 : DATABASE EPODOC EUROPEAN PATENT OFFICE, THE HAGUE, NL;
HK 1 047 380 A (KO YEE MEI MIMIEUX) 7 February 2003 (2003-02-07),
XP002312772 & WO 03/055343 (KO YEEMEI MIMIEUX) 10 July 2003
D5 : US 3 990 159 A (BORGEAS ALEXANDER T) 9 November 1976 (1976-11-09)
D6 : US 5 265 354 A (ALIANO JR JOSEPH F) 30 November 1993 (1993-11-30)
D7 : US 5 491 912 A (SNABB JOHN C ET AL) 20 February 1996 (1996-02-20)
D8 : US 2002/112373 A1 (TALBOTT DANIEL) 22 August 2002 (2002-08-22)

- 2 INDEPENDENT CLAIMS 1,5,6 and 7

Claim 1 contains all the features of claim 5 and is thus dependent from claim 5.

2.1 Prior Art:

Document D1 discloses a high performance dorsiflexion shoe for enveloping a foot (with straps 22 and 18; enveloping does not necessarily mean 'fully covering') of a wearer, including the wearer's metatarsal-phalangeal joint, the shoe comprising a sole portion having a ground-contacting surface, a forefoot region, a midfoot region and a heel portion, and a constraining device (18) above the metatarsal-phalangeal joint, wherein the forefoot region is made of a high density material (e.g. wood, plastic, metal) and has a thickness measure in a direction perpendicular to the ground-contacting surface of the sole portion greater than the thickness of the heel portion, thereby defining a dorsiflexion shoe having a characteristic angle of declination from the forefoot region to the heel portion, wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joint from movement when exercising, and wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running.

Problem 1:

to provide a composite sole and to ensure firm fixing of the various components.

Solution 1:

the forefoot region includes at least a hard, high density insert formed to follow the curvature of the sole portion
the at least one insert includes reinforcing ribs. (claim 5)

and the sole portion is a component of a shell which includes sidewall portions extending upwardly from the sole portion (claim 1).

Problem 2:

to provide a composite sole and to adapt the sole's characteristics to a particular sport of interest by defining the bending moment of inertia of the sole.

Solution 2:

the forefoot region includes at least a hard, high density insert formed to follow the curvature of the sole portion
the at least one insert includes slits for defining the bending moment of inertia of the insert (claim 6)

Problem 3:

to provide a composite sole and to adapt the sole's characteristics to a particular sport of interest.

Solution 3:

the sole portion is a component of a shell which includes sidewall portions extending upwardly from the sole portion
the forefoot region includes at least a hard, high density insert formed to follow the curvature of the sole portion
the at least one insert extends from the forefoot to the heel portion (claim 7)

2.2 The combination of features of each of the independent claims above is new and not rendered obvious by the available prior art D2-D8.

3 INDEPENDENT CLAIMS 10 and 22

3.1 Prior art:

Document D4 discloses (the references in parenthesis applying to the corresponding document WO 03/055343):

an adaptable shoe assembly wherein the assembly includes a shoe having a sole portion of a predetermined angle of inclination (figure 6), adapted to receive an interchangeable insole and at least one insole (8) which inserts into the shoe, the assembly changing the posture of a wearer's foot from one angle in a range between dorsiflexion and plantarflexion to another angle in the range resulting in a shoe defined by an angle of declination different from the pre-determined angle.

Problem 1:

providing a shoe which better restrains the metatarsal-phalange joint from moving and which also functions as a conventional plantarflexion shoe.

Solution 1:

the shoe is of a substantially normal plantarflexion form in which the metatarsal-phalangeal restraining device is adjustable over the metatarsal phalangeal joints of the wearer with or without an insole installed, and the foot-contacting portion of the sole portion of the shoe is of a form which suitably interfaces with the foot so that, when the insole is not installed, the shoe functions as a conventional plantarflexion shoe (claim 10).

Problem 2:

providing an adaptable shoe with an increased lever of the foot by increasing the stiffness of the sole portion.

Solution 2:

the forefoot region includes at least a hard, high density insert formed to follow the curvature of the sole portion (claim 22).

D4 does disclose two options for changing the angle of inclination: by changing the insole (figures 5,6) or the outsole (figures 3,4). The outsole in figures 3,4 is attached to the sole and cannot be considered as an insert. The combination of the sole is made of elastic plastic, whose flexibility and rigidity is suitable according to the

circumstances (see abstract D4). The attachment 4 can thus also be made of a higher density material.

However, neither the combination of features of a replaceable insole to change the inclination and a hard, high density insert (claim 22), nor the combination of a replaceable insole and an adjustable adaptable restraining device for the m-p joints (claim 10) is obvious in view of the available prior art D1-D3 and D5-D8.

4 DEPENDENT CLAIMS

Claims 2-3, 8-9, 11-16 and 23-25 add further features to their respective claims and thus also relate to novel and inventive subject matter. Claim 4 is redundant.

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What is claimed is:

1. (replaces original claim of the same number) A high performance dorsiflexion shoe for enveloping a foot (40) of a wearer, including the wearer's metatarsal-phalangeal joint (20), the shoe comprising

(a) a sole portion (24) having a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34), and

(b) a constraining device (16) above the metatarsal-phalangeal joint;

wherein the forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole portion, greater than the thickness of the heel portion, thereby defining a dorsiflexion shoe having a characteristic angle (α) of declination from the forefoot region to the heel portion;

wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising;

wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running;

wherein the sole portion (24) is a component of a shell (12) which includes sidewall portions (22) extending upwardly from the sole portion;

wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24); and

wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes reinforcing ribs (90).

2. (this claim is unchanged) The shoe of claim 1, wherein the sidewall portions (22) extend upwardly from the sole portion to a circumferential edge (13) which surrounds the wearer's foot (40).

3. (this claim is unchanged) The shoe of claim 2, wherein the circumferential edge (13) is higher in the heel region (34) than in the forefoot region (30), thus giving the outward appearance of a plantarflex shoe.

4. (this claim is unchanged) The shoe of claim 1, wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24).

5. (replaces original claim of same number) A high performance dorsiflexion shoe for enveloping a foot (40) of a wearer, including the wearer's metatarsal-phalangeal joint (20), the shoe comprising

(a) a sole portion (24) having a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34), and

(b) a constraining device (16) above the metatarsal-phalangeal joint;

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wherein the forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole portion, greater than the thickness of the heel portion, thereby defining a dorsiflexion shoe having a characteristic angle (α) of declination from the forefoot region to the heel portion;

wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising ;

wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running;

wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24); and

wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes reinforcing ribs (90).

6. (replaces original claim of same number) A high performance dorsiflexion shoe for enveloping a foot (40) of a wearer, including the wearer's metatarsal-phalangeal joint (20), the shoe comprising

(a) a sole portion (24) having a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34), and

(b) a constraining device (16) above the metatarsal-phalangeal joint;

wherein the forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole portion, greater than the thickness of the heel portion, thereby defining a dorsiflexion shoe having a characteristic angle (α) of declination from the forefoot region to the heel portion;

wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising ;

wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running;

wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24) ; and

wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes slits (200) for defining the bending moment of inertia of the insert.

7. (replaces original claim 9) A high performance dorsiflexion shoe for enveloping a foot (40) of a wearer, including the wearer's metatarsal-phalangeal joint (20), the shoe comprising

(a) a sole portion (24) having a ground-contacting surface (26), a forefoot region (30), a midfoot region (32) and a heel portion (34), and

(b) a constraining device (16) above the metatarsal-phalangeal joint;

wherein the forefoot region is made of a high density material, and has a thickness, measured in a direction perpendicular to the ground-contacting surface of the sole portion, greater than the thickness of the heel portion, thereby defining a dorsiflexion

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shoe having a characteristic angle (α) of declination from the forefoot region to the heel portion;

wherein the constraining device substantially constrains a wearer's metatarsal-phalangeal joints from movement when exercising,

wherein the forefoot region has a curved form defined so as to further minimize flexion of the metatarsal-phalangeal joint during walking or running;

wherein the sole portion (24) is a component of a shell (12) which includes sidewall portions (22) extending upwardly from the sole portion;

wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24), and

wherein the at least one insert (184, 186, 190) extends from the forefoot region (30) to the heel portion (34).

8. (replaces original claim 10) The shoe of claim 5, wherein the ribs (90) pass through a softer endo layer (92) and thus, present an exposed surface (91).

9. (replaces original claim 11) The shoe of claim 10, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) is molded of a color different from the sole, so as to prominently expose the form of the ribs (90) on an outside surface (91) of the shoe (10).

10. (replaces original claim 21) An adaptable shoe assembly wherein the assembly includes:

a shoe having a sole portion (24) of a pre-determined angle of inclination, adapted to receive an interchangeable insole (104, 104'); and

at least one insole which inserts into the shoe, the assembly changing the posture of a wearer's foot (40) from one angle in a range between dorsiflexion and plantarflexion to another angle in the range resulting in a shoe defined by an angle of declination different from the pre-determined angle, wherein the shoe is of a substantially normal plantarflexion form in which the metatarsal-phalangeal restraining device (16) is adjustable over the metatarsal-phalangeal joints (20) of the wearer with or without an insole (104, 104') installed, and the foot-contacting portion (26) of the sole portion (24) of the shoe is of a form which suitably interfaces with the foot (40) so that, when the insole is not installed, the shoe functions as a conventional plantarflexion shoe.

11. (replaces original claim 28) The shoe of claim 10, wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24).

12. (replaces original claim 29) The shoe of claim 11, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes reinforcing ribs (90).

13. (replaces original claim 30) The shoe of claim 12, wherein the ribs (90) pass through a softer endo layer (92) and thus, present an exposed surface (91).

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14. (replaces original claim 31) The shoe of claim 13, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) is molded of a color different from the sole portion (24), so as to prominently expose the form of the ribs (90) on an outside surface of the shoe.
15. (replaces original claim 32) The shoe of claim 11, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes slits (200) for defining the bending moment of inertia of the insert.
16. (replaces original claim 35) The shoe of claim 11, wherein the at least one insert (182, 184, 186, 190) extends from the forefoot region to the heel portion.
17. (new) A dorsiflexion shoe having a forefoot region and a sole portion, wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24) and including reinforcing ribs (90).
18. (new) The shoe of claim 17, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) includes slits (200) for defining the bending moment of inertia of the insert.
19. (new) The shoe of claim 17, wherein the at least one insert (184, 186, 190) extends from the forefoot region (30) to the heel portion (34).
20. (new) The shoe of claim 18, wherein the ribs (90) pass through a softer endo layer (92) and thus, present an exposed surface (91).
21. (new) The shoe of claim 21, wherein the at least one insert (66, 162, 180, 182, 184, 186, 190) is molded of a color different from the sole, so as to prominently expose the form of the ribs (90) on an outside surface (91) of the shoe (10).
22. (new) An adaptable shoe assembly wherein the assembly includes:
 a shoe having a sole portion (24) of a pre-determined angle of inclination, adapted to receive an interchangeable insole (104, 104'); and
 at least one insole which inserts into the shoe, the assembly changing the posture of a wearer's foot (40) from one angle in a range between dorsiflexion and plantarflexion to another angle in the range resulting in a shoe defined by an angle of declination different from the pre-determined angle, wherein the forefoot region (30) includes at least one hard, high density insert (66, 162, 180, 182, 184, 186, 190) formed to follow the curvature of the sole portion (24).
23. (new) The shoe of claim 23, wherein the at least one insert (182, 184, 186, 190) extends from the forefoot region to the heel portion.

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24. (new) The assembly of claim 23, wherein the assembly includes at least two insoles (104) of substantially differing weights, which alternatively insert into the shoe, providing the wearer with the ability to select a weight (106) to provide a particular level of energy consumption during use.

25. (new) The assembly of claim 23, wherein the shoe is of a substantially normal plantarflexion form in which the metatarsal-phalangeal restraining device (16) is adjustable over the metatarsal-phalangeal joints (20) of the wearer with or without an insole (104, 104') installed, and the foot-contacting portion (26) of the sole portion (24) of the shoe is of a form which suitably interfaces with the foot (40) so that, when the insole is not installed, the shoe functions as a conventional plantarflexion shoe.

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AMENDED SHEET